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In the claims:

1. (Currently Amended) A mammography imaging assembly comprising:

a gantry frame assembly;

an imaging signal generation assembly mounted to said imaging frame;

an imaging detector bucky mounted to said imaging frame assembly, said imaging detector bucky comprising a patient exposure surface facing said imaging signal generation assembly;

at least one thermo sensor assembly positioned to monitor temperature at said patient exposure surface;

a thermo generating element in thermal communication with said patient exposure surface;

a logic in communication with said at least one thermo sensor assembly and said thermo generating element, said logic utilizing information from said at least one thermo sensor to control heat generated by said thermo generating element such that the temperature of said patient exposure side is controlled; and

a compression paddle movably positioned between said imaging signal generation assembly and said imaging detector bucky;

wherein said thermo generating element comprises a non-radiolucent cover surrounding said imaging detector bucky; and

said logic is further adapted to automatically remove said non-radiolucent cover prior to activating said imaging signal generation assembly.

2. (Original) A mammography imaging assembly as described in claim 1 wherein said thermo generating element comprises a thermo electric element positioned within said imaging detector bucky.

3. (Original) A mammography imaging assembly as described in claim 1 wherein said logic is in communication with said imaging signal generation assembly, said logic adapted to remove power from said thermo generating element prior to activating said imaging signal generation assembly.

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4. (Original) A mammography imaging assembly as described in claim 3 wherein said logic is further adapted to:

lower said compression paddle into thermal communication with said thermo generating element; and

raising said compression paddle prior to activating said imaging signal generation assembly.

5-6. (Cancelled)

7. (Currently Amended) A mammography imaging assembly as described in claim ~~[[6]]~~1 wherein said non-radiolucent cover is removed in response to said compression paddle moving away from said imaging detector bucky.

8. (Original) A mammography imaging assembly as described in claim 1 wherein said imaging detector bucky comprises an upper bucky surface defining an imaging region, said at least one thermo sensor assembly positioned outside said imaging region.

9. (Original) A mammography imaging assembly as described in claim 1 wherein said thermo generating element comprise:

a heater array comprising a conductive polymer coating bonded to a film base, wherein said conductive polymer coating comprises carbon flakes suspended in a liquid polymer.

10. (Original) A mammography imaging assembly as described in claim 1 wherein said thermo generating element comprise:

a heater array comprising a conductive polymer coating bonded to a film base and a protective film layer laminated to said film base.

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11. (Currently Amended) A mammography imaging assembly comprising:

an imaging frame assembly;

a imaging signal generation assembly mounted to said imaging frame;

an imaging detector bucky mounted to said imaging frame assembly, said imaging detector bucky comprising a patient exposure surface facing said imaging signal generation assembly;

at least one thermo sensor assembly positioned to monitor temperature at said patient exposure surface;

a thermo generating element in thermal communication with said patient exposure surface; and

a logic in communication with said at least one thermo sensor assembly and said thermo generating element, said logic utilizing information from said at least one thermo sensor to control heat generated by said thermo generating element such that the temperature of said patient exposure side is controlled, said logic in communication with said imaging signal generation assembly, said logic adapted to remove power from said thermo generating element prior to activating said imaging signal generation assembly;

wherein said thermo generating element comprises a non-radiolucent cover surrounding said imaging detector bucky; and

said logic is further adapted to automatically remove said non-radiolucent cover prior to activating said imaging signal generation assembly.

12. (Original) A mammography imaging assembly as described in claim 11 further comprising:

a compression paddle movably positioned between said imaging signal generation assembly and said imaging detector bucky.

13. (Original) A mammography imaging assembly as described in claim 11 wherein said thermo generating element comprises a thermo electric element positioned within said imaging detector bucky.

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14-15. (Cancelled)

16. (Currently Amended) A mammography imaging assembly as described in claim ~~[[15]]~~11 wherein said non-radiolucent cover is rotated away from said imaging detector bucky prior to activation of said imaging signal generation assembly.

17. (Original) A mammography imaging assembly as described in claim 11 wherein said thermo generating element comprise:

a heater array comprising a conductive polymer coating bonded to a film base, wherein said conductive polymer coating comprises carbon flakes suspended in a liquid polymer.

18. (Currently Amended) A method of maintaining control of the temperature of a patient exposure surface on an imaging bucky detector as a portion of a mammography imaging assembly comprising:

monitoring the temperature of the patient exposure surface using at least one thermo sensor assembly positioned in communication with patient exposure surface;

reporting said temperature to a logic;

using said logic to control a thermo generating element in response to said temperature such that said temperature can be raised or lowered, said thermo generating element in thermal communication with said patient exposure surface, said thermo generating element comprising a non-radiolucent cover surrounding said imaging detector bucky; and

using said logic to automatically remove said non-radiolucent cover prior to activating said imaging signal generation assembly.

19. (Original) A method as recited in claim 18 further comprising:  
activating a imaging signal generation assembly using said logic; and  
cutting power to said thermo generating element prior to activating said imaging signal generation assembly.

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20. (Original) A method as recited in claim 18 further comprising:  
activating a imaging signal generation assembly using said logic;  
moving a compression paddle into thermal communication with said patient exposure surface prior to use of said imaging signal generation assembly such that thermal energy is transferred from said patient exposure surface to said compression paddle; and  
separating said compression paddle from said patient exposure surface prior to use of said imaging signal generation assembly.